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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/083,875	02/27/2002	Carl Mizuyabu	1376.0200080	4740

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EXAMINER

PATEL, NITIN C

ART UNIT	PAPER NUMBER
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2116

DATE MAILED: 05/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/083,875

Applicant(s)

MIZUYABU ET AL.

Examiner

Nitin C. Patel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-53 is/are pending in the application.
- 4a) Of the above claim(s) 2-5, 14, 15, 19, 20, 29, 30 and 33 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 28, 31, 32, 34-37 and 51-53 is/are allowed.
- 6) ☒ Claim(s) 1, 6-13, 16-18, 21-27, and 38-51 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This is in responsive to amendment filed on 28 April 2005.
2. Claims 2 – 5, 14, 15, 19, 20, 29, 30, and 33 have been cancelled.
3. Claims 43 – 53 have been added new.
4. Claims 1, 6 – 13, 16 – 18, 21 – 28, 31 – 32, and 34 – 53 are presented for examination.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 8 – 13, 47, and 50, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
6. The claims 8 – 10, are directly or indirectly depend upon claim 1, and the cited limitation “the number of bits used to represent multimedia data” is not in relation with claim 1, as there is no data with claim 1. There is insufficient antecedent basis for this limitation in the claim.
7. Claim 13 is directly or indirectly depends upon claim 1, and the cited limitation “wherein a number of bits used to represent multimedia data is reduced” is not in relation with claim 1, as there is no data in claim 1. There is insufficient antecedent basis for this limitation in the claim.
8. The claims 47, and 50 are directly or indirectly depend upon claim 1, and the cited limitation “modifying a number of bits used to represent multimedia data” is not in

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relation with claim 1, as there is no data with claim 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1, 6 – 7, 11, 21, 38 – 40, and 42 – 45, are rejected under 35

U.S.C. 102(b) as being clearly anticipated by Paver, US Patent 6,049,882 [cited in previous office action].

10. As to claims 1, and 38, Paver discloses an apparatus and method comprising:

- a. identifying [by counting number of instructions waiting in queue] an operating characteristic [delay (cycle time)] of an instruction buffer [instruction buffer/FIFO/register, fig. 3], the operating characteristics comprising at least one of a buffer fullness [register stalled represents fullness as it can not except data until register is empty][col. 2, lines 40 – 56, col. 4, lines 48 - 52], a rate of change of a number of pending instructions stored [by counting number of instructions waiting in a queue per cycle time] in the instruction buffer [col. 6, lines 1 – 15] or a type of instructions [priority] stored in instruction buffer [col. 5, lines 43 – 56, col. 6, lines 54 – 57, 63 – 65], and
- b. adjusting a system characteristic [system performance] based on the operating characteristic [delay (cycle time)], wherein power consumption is modified

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[adjusted] based on the system characteristic [system performance][col. 5, lines 60 - 67, col. 6, lines 1 - 14, fig. 3, 8].

11. As to claim 6, and 39, Paver teaches the operating characteristic including a rate of change in a number of pending instructions stored in an instruction buffer [by counting number of instructions waiting in a queue per cycle time] [col. 5, lines 2 – 67, col. 6, lines 1 – 14].

12. As to claims 7, and 40, Paver teaches the operating characteristic including a type of instructions [priority] stored in the instruction buffer [col. 5, lines 43 – 56, col. 6, lines 54 – 57, 63 – 65].

13. As to claims 11, 42, and 45, Paver teaches adjusting the system characteristic including modifying s clock speed [frequency] [col. 5, lines 41 – 56].

14. As to claims 21, and 44, Paver teaches the operating characteristic including a buffer fullness [register stalled represents fullness as it can not except data until register is empty][col. 2, lines 40 – 56, col. 4, lines 48 - 52].

15. As to claim 43, Paver discloses system characteristic including a supported power [E, energy][col. 5, lines 32 – 42].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title; if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

16. Claims 8 – 10, 13, 41, 47, and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paver, US Patent 6,049,882 [cited in previous office action] as applied to claims 1, 6 – 7, 11, 21, 38 – 40, and 42 – 45, above, and further in view of Bucher, US Patent 6, 678,737 B1.

17. As to claims 8, 13, 41, 47, and 50 Paver discloses an apparatus and method of communication between receiver and transmitter comprising: identifying [by counting number of instructions waiting in queue] an operating characteristic [delay (cycle time)] of an instruction buffer [instruction buffer/FIFO/register, fig. 3], the operating characteristics comprising at least one of a buffer fullness [register stalled represents fullness as it can not except data until register is empty][col. 2, lines 40 – 56, col. 4, lines 48 - 52], a rate of change of a number of pending instructions stored [by counting number of instructions waiting in a queue per cycle time] in the instruction buffer [col. 6, lines 1 – 15] or a type of instructions [priority] stored in instruction buffer [col. 5, lines 43 – 56, col. 6, lines 54 – 57, 63 – 65], and adjusting a system characteristic [system performance] based on the operating characteristic [delay (cycle time)], wherein power

consumption is modified [adjusted] based on the system characteristic [system performance][col. 5, lines 60 - 67, col. 6, lines 1 - 14, fig. 3, 8].

However, Paver does not teach that the system characteristic includes altering the number of bits used to represent multimedia data.

Bucher teaches home network appliance and method for data management for multimedia data including trans-coding of MPEG multimedia data by reducing number of bits that used to represents the data for particular portions of an image [col. 6, lines 51 – 65].

It would have been obvious to one of ordinary skill in art, having the teachings of Paver and Bucher before him at the time of invention was made, to modify apparatus and method of the data processing for reducing power consumption as disclosed by Paver to include a transcoding of MPEG multimedia data by reducing number of bits to represent multimedia data as taught by Bucher in order to obtain relatively simple processing of multimedia data with reduced signal-to-noise ratio and saving valuable memory space [col. 6, lines 44 –47, 55 – 65].

18. As to claims 9 – 10 Bucher discloses that multimedia data includes video data, and audio data [col. 6, lines 29 – 31].

19. Claims 12, 16 – 18, 46, and 49, are rejected under 35 U.S.C. 103(a) as being unpatentable over Paver, US Patent 6,049,882 [cited in previous office action] as applied to claims 1, 6 – 7, 11, 21, 38 – 40, and 42 – 45, above, further in view of Bucher, US Patent 6, 678,737 B1, and further in view of Gupta et al. [hereinafter as Gupta], US Patent 5,996,083 [cited in previous office action].

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20. As to claims 12, 16 – 18, 46, and 49, Paver discloses an apparatus and method of communication between receiver and transmitter comprising: identifying [by counting number of instructions waiting in queue] an operating characteristic [delay (cycle time)] of an instruction buffer [instruction buffer/FIFO/register, fig. 3], the operating characteristics comprising at least one of a buffer fullness [register stalled represents fullness as it can not except data until register is empty][col. 2, lines 40 – 56, col. 4, lines 48 - 52], a rate of change of a number of pending instructions stored [by counting number of instructions waiting in a queue per cycle time] in the instruction buffer [col. 6, lines 1 – 15] or a type of instructions [priority] stored in instruction buffer [col. 5, lines 43 – 56, col. 6, lines 54 – 57, 63 – 65], and adjusting a system characteristic [system performance] based on the operating characteristic [delay (cycle time)], wherein power consumption is modified [adjusted] based on the system characteristic [system performance][col. 5, lines 60 - 67, col. 6, lines 1 - 14, fig. 3, 8].

However, Paver does not teach that the system characteristic includes altering the number of bits used to represent multimedia data.

Bucher teaches home network appliance and method for data management for multimedia data including trans-coding of MPEG multimedia data by reducing number of bits that used to represents the data for particular portions of an image [col. 6, lines 51 – 65].

However, neither Paver nor Bucher teaches explicitly power management to modifying [controlling by increasing or decreasing] nominal power provided to the system.

Gupta discloses a microprocessor system and method to shut down or adjust the execution rate [clock speed] of function unit [col. 5, lines 49 –57] with clock dividers that divides the master clock signal down by integer ratios [e.g. 1/2, 1/3, % . . . 1/16] responsive to a corresponding values in power control register fields [col. 3, lines 40 – 67, col. 4, lines 1 – 35, col. 6, lines 40 – 65, fig. 2].

It would have been obvious to one of ordinary skill in art, having the teachings of Paver, Bucher, and Gupta before him at the time of invention was made, to modify the power management for reducing power consumption in computer system disclosed by Paver, to include trans-coding of MPEG multimedia data by reducing number of bits that used to represents the data for particular portions of an image [col. 6, lines 51 – 65], and also to include an improved power management as taught by Gupta in order to obtain microprocessor controlling the power consumption of individual function units and power control register fields set by software which has much greater ability to look out into future requirement of functional units and software control permits power management capabilities not possible with hardware and software possesses knowledge that is unavailable to hardware make more informed power management decisions that have the least impact on performance [col. 3, lines 40 - 67, col. 4, lines 1 – 67].

21. **Examiner's note:** Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant.

Although the specified citations are representative of the teachings of the art and are applied to the specific limitations within the individual claim, other passages and figures

may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

22. **Prior Art not relied upon:** Please refer to the references listed in attached PTO-892, which, are not relied upon for claim rejection since these references are relevant to the claimed invention.

Response to Arguments

Applicant's arguments filed on 28 April 2005 have been fully considered but they are not persuasive. In reference to anticipation rejection of amended independent claims 1, and 38, examiner disagrees with applicant's arguments regarding not teaching of amended limitations. As Paver discloses "the operating characteristics comprising at least one of a buffer fullness [register stalled represents fullness as it can not except data until register is empty][col. 2, lines 40 – 56, col. 4, lines 48 - 52], a rate of change of a number of pending instructions stored [by counting number of instructions waiting in a queue per cycle time] in the instruction buffer [col. 6, lines 1 – 15] or a type of instructions [priority] stored in instruction buffer [col. 5, lines 43 – 56, col. 6, lines 54 – 57, 63 – 65].

23. In reference to anticipation rejection for amended independent claims 1, and 38, examiner agrees with the applicant arguments for Yu [US Patent 6,463,542] reference, and anticipation rejection is withdrawn.

24. In reference to anticipation rejection for amended claims to claims 28, 29, 31 – 35, and 37 examiner agrees with the applicant arguments for Veltchev [US Patent 6,590,730] reference and anticipation rejection is withdrawn.

25. Applicant's arguments, regarding obviousness rejection of claims 11 – 20, and 42 as being unpatentable over Yu in view of Gupta [Us Patent 5,996,083], have been fully considered and are persuasive. Therefore, the rejection has been withdrawn.

26. However, upon further consideration, a new ground(s) of rejection is made over Paver in view of Gupta [Us Patent 5,996,083].

27. Claims 28, 31 – 32, 34 – 37, and 51 - 53 are allowed.

Reasons For Allowance

28. The following is an examiner's statement of reasons for allowance: Applicant's claimed invention distinguishes over the prior art for following reasons.

The independent claim 28 is allowable over the art of record and none of the references either alone or in combination, discloses or renders obvious a system with a buffer monitor to track buffer statistic and provide buffer status representing a comparison of buffer statistic and statistic threshold to a power threshold for initiating a power conservation.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nitin C. Patel whose telephone number is 571-272-3675. The examiner can normally be reached on 6:45 am - 5:15 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne H. Browne can be reached on 571-272-3670. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nitin C. Patel
May 24, 2005


LYNNE H. BROWNE
SUPERVISORY PATENT EXAMINER
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